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ABSTRACT

Understanding today's Internet-based distance learning systems for effective and successful implementations is a growing interest both for researchers and practitioners. This paper clarifies the differences among the first- and second-generation Internet-based distance learning systems. A closer look is given to the key players in this area: the student/learner, the professor/faculty/teacher/facilitator, and the administrators/IT (information technology) administrators. The paper then builds an argument for the future of next generation distance learning systems based upon the current issues concerning Internet-based distance learning and Internet-based distance learning systems. It is assumed that, in the next few years, broadband Internet access and the use of Internet appliances will increase the demand for Internet-based degrees, with more emphasis on real time collaboration as the key for learning success, especially Internet-based MBA (Master of Business Administration) degrees. The paper prepares the groundwork for future research that seeks scientific evidence for enhanced student learning experiences from the combination of the first- and second-generation systems. It is the author's opinion that in the near future students will pay a premium to sit in conventional classrooms and interact with professor and classmates, as opposed to today, when students pay a premium to attend Internet-based distance learning courses. (Contains 16 references.) (MES)

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E-LEARNING: AN OVERVIEW OF NEXT-GENERATION INTERNET BASED DISTANCE LEARNING SYSTEMS.

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ABSTRACT:

Many firms today are investing in Internet based distance learning systems or e-learning systems due to the tremendous time constrains both on the employees and the firm. It is estimated that the portion of e-learning market devoted to IT content training only is expected to grow from $1.7 billion in 2000 to about $5.3 billion in 2003 (Smalley-Bowern 2000). Understanding today's Internet based distance learning systems for effective and successful implementations is in growing interest both for researchers and practitioners. Initially, this paper attempt to clarify the differences among the first- and second-generation Internet based Distance Learning systems. A closer look is given to the key players in this area: the student/learner, the professor/faculty/teacher/facilitator, and the administrators/IT administrators. Additionally, this paper will build an argument for the future of next generation distance learning systems based upon the current issues concerning Internet based Distance Learning and Internet based Distance Learning systems. It is assumed that in the next few years, broadband Internet access and the use of Internet Appliances will increase even more the demand for Internet based degrees with more emphasis on real time collaboration as the key for learning success, especially Internet based MBA degrees. This paper will prepare the ground for future research that seek scientific evidence for enhanced students learning experience from combination of the first- and second-generation systems. It is my impression that in the near future students will pay premium to seat in conventional classrooms and interact with professors and classmates, as opposed today, that students asked to pay premium to attend Internet based Distance Learning courses.

E-LEARNING: AN OVERVIEW OF NEXT-GENERATION INTERNET BASED DISTANCE LEARNING SYSTEMS.

INTRODUCTION:

It is said that the twentieth century and especially the second half of this century changed the world forever. The use of technology and information systems as a tool becomes more and more a necessity rather than a luxury or recreation. The explosive growth of technology and information systems both in homes and in firms has motivated individuals to educate and expose themselves to a variety of technologies. In the last decade of the twentieth century and the beginning of the twenty first century the Internet and other information systems provide a tool for individuals and firms to gather information, make informed decisions and conduct business over great distances that could not have been achieved without these technologies.

Many firms are spending millions of dollars on new technologies. Most expenditures are related to information systems for the primary purpose of enhancing their business processes thus increasing productivity. With very low unemployment rate and relatively high demand for qualified IT personnel in the US, firms are straggling to retain their employees. On the other hand, employees are more and more stressed for time both in their workplace and at home due to pace of the "fast economy" and the use of technology and information systems. Furthermore, with the Internet access at offices, at homes, on cell phones, or in cars some employees are virtually twenty-four hours a day on the job. Consequently, employees are seeking some personal rewards from firms and from their workplace. Many employees desire to improve themselves and expand their knowledge while working vicious hours. They feel that they have to keep up with the technology, due to many upgrades, changes and new systems that they have to catch-up and stay abreast.

One of the methods firms are rewarding their employees includes providing training either within the firm in a corporate university settings (i.e. Oracle, Microsoft, Cisco, and many more) or outside the firm in a traditional university settings. Due to the tremendous time constrains both on the employees and the firm, many firms are investing in Internet based distance learning systems or e-learning systems. It is estimated that the portion of the e-learning market devoted to IT content only is expected to grow from $1.7 billion in 2000 to about $5.3 billion in 2003 (Smalley-Bowern 2000). This tremendous growth is mainly due to the great flexibility in delivery of most e-learning programs. Having the learning experience as a self-pace, customized, asynchronous (non-real time) and even modular can add up to the flexibility of e-learning programs. New emerging technologies enable synchronous (real time) content delivery over the Internet. These tools are changing the ways most e-learning have been viewed in the past few years.

It was said that the key for the learning experience is not the content, but rather the interaction of real situations in real time (Goldwasser 2000). The idea of learning by doing or interacting with classmates rather than learning by reading is not new to the business community. In 1957 the American Management Association first suggested that learning business situation is much more efficient with simulations and case studies than reading the concepts. This is why I believe e-learning will heavily include the traditional instructor-led teaching but the medium will be online where students access from all over the world, rather than traditionally, one physical location on campus.

Since the late 1980s there is a dramatic explosion of corporate universities. In late 1980s there were about handful corporate universities, while in the mid 1990s there were more than 400 corporate universities, and it is estimated that in the late 1990s there were more than 1600 corporate universities (Moore 1997; Suzik 1999). Some put at fault of this tremendous growth in corporate universities at the traditional business schools for not supplying MBAs with needed training which they can apply the next day in their job, rather provide them with learning tools. Many corporations, in particular American corporations, acknowledged that one of the major factors in sustaining the competitive advantage is the ability to learn faster than competitors. Today some corporations have a chief learning officer (CLO) who has a strategic and leadership position within the executive management level. This exemplifies the importance that learning and training takes in the firm.

In the past two decades there was a growing trend to deliver education, primarily business and management education, to remote students wherever they are outside the traditional university campus. In the late 1980s Canadian business schools invested enormous amount of time and resources to develop learning programs for a distance delivery. US business schools quickly followed them with some top business schools like Duke and Michigan implementing Internet based distance learning programs. As the use of the Internet increased, during the second half of the 1990s, many other US

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universities headed by their business schools implemented Internet based distance learning programs almost all include one version or another of MBA program.

It is estimated that the so called "cash cow" of the business schools, executive MBA program, will be in growing competition with the corporate university in the following years (Davids-Landau 2000). Many youngsters today graduating from high school, skip traditional college education and go directly to corporate university, or other corporate certificate program, i.e. Microsoft's "Microsoft Certified System Engineer" or "Microsoft Certified System Designer". This, they believe, may help them land on a well paying job and a prospective career path, without traditional college degree.

As indicated above, competition and explosive growth in the use of the Internet as a learning tool both in corporate and in traditional universities will continue in the future. Therefore, understanding of today's Internet based distance learning systems for effective and successful implementations is the growing interests for both the researchers and practitioners. I believe that the overall reliance on instructor-led teaching will remain similar in the next several years; it's the medium of delivery that will change.

I will begin this paper with a brief history of distance education, highlighting today's Internet based distance education and continuing with the clarification of the first and second generation systems. Furthermore, I will explore the major players playing in the academic domain of e-learning and their evolution: the student/learner, the professor/faculty/teacher /facilitator, and the administrators/IT administrators.

BRIEF HISTORY OF DISTANCE EDUCATION:

The history of distance education can be traced back to the early form of education by correspondence via regular mail in the late 1800s (Burke and Slavin 2000). The first form of distance education relied heavily on a self-study student driven learning, mainly out of printed material that was mailed to the student in a remote location. As technology progressed, it gained an essential roll in the "conventional" classroom. Educators and administrators began to seek its use for distance education purposes. The early days of technology in the classroom included photo slides and motion pictures. Later on it evolved into films during the late 1910s early 1920s. As the cost and the development time of these new technologies were tremendous many academic institutions seeking to provide distance education had to continue to relay on education by correspondence (Barker et al. 1989).

In the 1930s radio transmission of educational studies encountered a failed trial, again most likely due to similar reasons of cost and development time. At the same time in 1932, seven years before commercial television was introduced to the American market, the State University of Iowa has began experimenting with television transmission of instructional courses. Due to World War II this early pick of enhanced technological advancements use in distance educations had to be put on hold, but these early experimental days signaled the potential use of cutting-edge technology in distance education (Wright 1991). It appears that the televised distance education was here for good. The following five decades, and even today,courses have been broadcasted via live television transmission or even pre-recorded for ease of use and flexibility for the students.

As newly and emerging technologies played a major roll in every step of the evolution of distance education, it is not surprising that the emergence of the Internet as a new medium of communication revolutionized the distance education field. During the 1990s there was an enormous progress in the use of the Internet for delivery of instructional education. Many higher education administrators believed that distance education delivered over the Internet would be the ultimate haven for them, providing both large possibilities to reach students at remote locations, across continents or the world and compete with other universities. At the same time, it would increase student enrolments and maintain the same limited physical resources available on-campus. At a period of declining student enrollments, aging student population, declining recruitment of new instructors, and reduced level of federal, state, and local funding, some higher education administrators are even under the impression that class size is not a limiting factor any longer as there are no physical restrictions on the number of students that can be taught via the Internet by an individual instructor.

Apparently these beliefs were proven wrong and Internet based distance education has its own limitations. Most of today's Internet based courses are concentrated around the benefit of flexible education, self-study student driven learning "anytime", and "anywhere". In the past few years many universities have been investing heavily in development of partial or full Internet degree programs. Most of these Internet based distance education programs were designed with the "self-study student driven" learning model. Some universities subcontracted with non-academic IT companies to develop high quality programs in "just-in-time" mode or with 24×7 availability mode while at the same time create a rich instructional material, including slides, audios, videos, animations or illustrated figures, interactive learning games, web links, and collaboration tools (Burke and Slavin 2000).

INTERNET BASED DISTANCE EDUCATION:

Some researchers divide current Internet based distance education systems into two generations: "asynchronous mode" and "synchronous mode". The division is based mainly on the mode with which the lecture is enabled via the interface between the professor and students. It is also considering the mode at which technology enables the communication between the student-and-the-professor and the-student-and-classmates.

The first generation of Internet based distance education systems are the "asynchronous mode" which consist heavily from a "student driven learning" or "learning on demand" type of education (See figure 1 for a sample of WebCT course interface). The word "asynchronous" in the sense of "non real-time", is referred to the type of education that the professor is not providing any live or real-time lecture via the Internet. The course content or learning material is developed ahead of time and is available to the student in the form of slides, audios, videos, animations or illustrated figures, web links, and interactive learning games and collaboration tools. The student is initiating the learning process by logging into a secured website from any corner of the world via the Internet. The students browse the content at their own pace, post and read messages to/from a bulletin board or newsgroups, upload homework assignments for the professor's or TA's review, and take quizzes during allocated time. Most first generation Internet based distance education courses are a substantial extension of regular classroom material curriculum tweaked and converted for delivery via the Internet (Zielinski 2000a). It is well established in the literature (Wegner et al, 1999), and I found similar evidence in a data collected over three years 1998 to 2000 in undergraduate business students, that the learning outcomes of first generation Internet based distance learning courses are at least as good as in-class ones. The analysis, results and conclusions of this data are subject for another paper, which I do not plan to address in this paper.

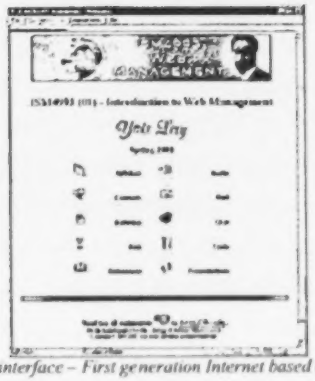

Figure 1. WebCT course interface – First generation Internet based distance education system

A new breed of Internet based distance education system is emerging due to some new innovations in Internet technologies mainly in the area of voice over Internet protocol (VoIP) and the increase popularit y of high speed Internet connection at residential locations (See figure 2 for a sample of a Centra Symposium interface). The second generation Internet based distance education systems are the "synchronous mode". The word "synchronous" in the sense of "real time" is referred to the type of education that the professor is delivering real-time lecture. Although the so -called "asynchronous" courses contain some types of synchronous communication tools such as the chat or the whiteboard, the mode of lecture and course content delivery is still non-live. In a synchronous environment of Internet based distance education the course content or learning material is similarly to be developed a head of time mainly in the form of slides, animations or illustrated figures, web links demonstration that will be available to the student during the live session.

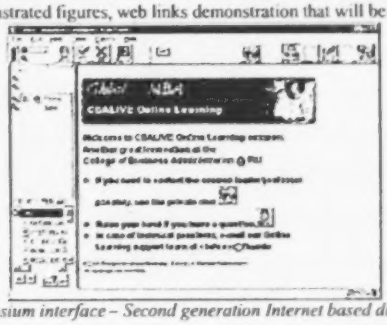

Figure 2. Centra Symposium interface – Second generation Internet based distance education system

While in the asynchronous mode of learning, the student is initiating the learning process, in the synchronous mode of learning, the professor is the one initiating the learning process pertaining primarily to the lecture and course content delivery portion only. The professor schedules a time for live session, the students are logging into a secured website from any corner of the world via the Internet and accessing a "virtual classroom" environment, where the other classmates and the professor in synchronous environment are connected but physically separated from one another. While time difference is an issue that must be addresses, it is possible to deliver real-time lectures over synchronous Internet based tools. Using this "virtual classroom" environment the professor can lecture over the Internet, the students can see the slides and follow his/her slide demonstration and simultaneously hear the professor's voice. Students can also interact with classmates and the professor in real time.

Most "virtual classroom" environment will allow the professors to function and deliver their lectures similarly to delivery of lecture in conventional classroom setting or computer lab on campus equipped with computer and Internet access. In this mode, the professor and students are physically located in separate locations. Students can still see the demonstration and hear the professor's voice as they are in a conventional classroom. Features as slides show, application demonstration, web demonstrations, breakout rooms, two way audio between the professor and students, whiteboard, and instant surveys are part of most "virtual classroom" environment tools available in the market today. Some of these tools will utilize the telephone system to deliver the audio and the Internet to deliver the data, while other tools use the Internet infrastructure for both the audio and the data delivery.

As most instructional courses consist of not only classroom activities and lectures, but also include "off-class" discussions, homework assignment or other "off-class" activities which can greatly be achieved via the "asynchronous mode", some innovative educational institutions have started to integrate both the first and the second generation Internet based distance education systems (See figure 3 for a sample of WebCT course interface with a link to the "Live Session" Centra Symposium interface). By integrating the two systems, students are required to attend live lectures via the Internet and at later time submit assignments via a course website, communicate, collaborate, and contribute to general "off-class" time discussions with classmates and the course professor, and read the course notes prior to the live sessions. In the next decade it is predicted that technological advances may make Internet based distance education much more effective and financially attractive both for universities and students/consumers.

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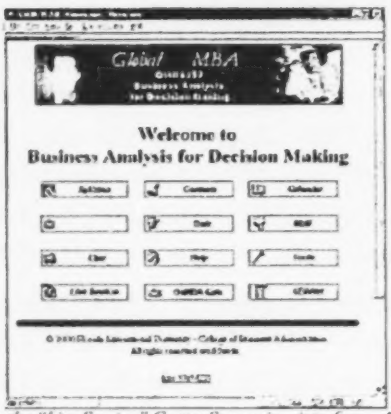

Figure 3. WebCT course interface with a link to the "Live Session" Centra Symposium interface – An integration of both the "first generation" and "second generation" Internet based distance education systems

Technological advances and telecommunication improvements will dramatically increase the bandwidth in the so-called "last-mile" of Internet access. The "last-mile" is a coined nickname for the telecommunication connection between the residential locations and the closest local telecommunication company's main switch. The last-mile has been always the bottleneck of Internet access for residential customers (Burke and Slavin 2000). Consequently, the use of voice over Internet protocol (VoIP) for Internet based distance education will soar. Apparently if the bandwidth of the last-mile Internet access will increase, software technology will quickly catch-up and come with new innovations to "fill" the bandwidth up. It is already available in some of the new versions of the synchronous "virtual classroom" environment tools, which enable streaming of video images of the individual who is talking whether it's the professor or a student. Today the quality of the video transmission over standard modem connection is relatively poor, and even companies with high bandwidth are having some difficulties accommodating the demand of simultaneous video and data over their network. Due to these technological constrains, at the moment, this new technology is not widely used, but it will definitely be the future path of the next generation Internet based distance education systems.

Some instructional media developers claim, as the old saying, that "a picture worth a thousand words"… a video of the professor will make the student more motivated and involved in the lecture while providing the "feel" of a conventional classroom environment.

In summary, Internet based distance education will not completely eliminate the conventional classroom learning. There will be always students that prefer seating in a classroom and experiencing conventional classroom lecture rather than an Internet based classroom experience. However, as the demand for lifelong learning, technological innovations, and individuals' technological proficiency increases the use of distance education over the Internet is expected to multiply in the next decade. Nowadays most universities and higher education institutions charge premium from students taking Internet based distance education courses, it is predicted that in the next decade the coin will flip and students will have to pay premium to seat in a conventional classroom. The combination of the first generation "asynchronous" and the second generation "synchronous" Internet based distance education systems will intensify in the next few years, allowing educational institutions to reach new and remote markets, while at the same time increase dramatically the competition among educational institutions around the world.

THE STUDENT, LEARNER:

There are two kinds of students' thoughts about Internet based distance education. The first one will experience this type of education and will appreciate the value of its flexibility. While the other will not seek to experience Internet based distance education, as it is absolutely impossible for that type of student to devote time for self-learning education. Unless the learning mode is very structured and requires them to attend classes on designated times, they will simply not be able to catch-up and most likely fall behind (Carswell et al. 1999).

The students who value the flexibility of Internet based distance education should posses a higher level of self-time management and discipline, especially in the first generation type of Internet based distance education systems. Some even claim that many students participating in this type of learning have less hectic lives, meaning young and single (Zielinski 2000b). They greatly value the ability to seat in their home office and access the asynchronous class material while wearing only bathrobes, rather than drive to campus during rush hours, fight traffic and spend forty-five minutes begging for a parking spot on campus.

Students whose lives are much more hectic, perhaps married with kids or working mothers or single parents, will be less tolerant toward the first generation of Internet based distance education, mainly due to the fact that their days are full with activities, and when their kids finally fall a sleep, they are so exhausted that it is virtually impossible for them to devote time and concentrate on a self-pace learning course.

Overall individuals today, no matter their lifestyle, are increasingly constrained by time and are virtually twenty-four hours a day on the job. Consequently devoting time for their self-pace course study is a low priority. In one study, 95% of the respondents identify time constraints as a "very important" or "somewhat important" reason for attending Internet based distance learning courses. Additional researchers also supported these findings (Thompson and McGrath 1999).

Another factor affecting students participating in Internet based distance education courses is the challenges of learning via the Internet, especially with the first generation types. The lack of clear explicit instructions of the coursework requirements including the amount of reading, assignments and bulletin board postings, discourage many students taking Internet based courses. This obstacle is clearly due to weak instructional development and definition of course content and activities related to Internet delivery. This problem can be addressed by a relatively low compensation to professors and the lack of adequate instructional development support and training on Internet based courses and distance learning course environment in general. Poor design of course content, and ambiguous instructions and the inconsistency of "look and feel" of some courses are the main concern of Internet based distance learning students. Some universities require their professors to develop their own courses while not providing the support needed, resulting in most cases in low-quality course presentation with tremendous amount of boring text, non-stimulating images and inadequate course content. Therefore, students prefer to read the textbook assigned to the course instead of learning the course content via the Internet (Carswell et al. 1999).

For Internet course lectures that are delivered via the second-generation systems, students have a better framework and are required to attend lectures via the Internet at designated time.

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Another common problem with students' learning over the Internet is attributed to the lack of technical knowledge about the use of common Internet applications and communication tools over the web. It is expected that in the next decade students will feel more natural comfortable with learning via the Internet, as their daily use of the Internet will be a routine part of their daily lives as much as the phone system is known for many people today. There are still many students today who are registered for Internet based distance learning courses even though their technical skills are not adequate to attend such courses. Students often get overwhelmed with the technology and fall behind their learning pace due to lack of such skills and support. This fact was also collected in the data that I plan to fully analyze and present in another paper. Most institutions will claim that they require students to posses some minimum technical skills but almost none actually assess and enforce it. Added to this is the fact that Internet technologies and Internet tools are rapidly changing, making the learning tools much more advanced, hence more complicated for students with limited knowledge and experience with the basic tools to grasp. This problem is more significant in the introduction of second generation systems. As second generation Internet based distance learning systems become the "bleeding edge" of today's technology, by challenging many technological glitches, students without basic technological knowledge will quickly get frustrated and are likely to drop the course or even drop out of the program, while students with fair basic technological knowledge will better tolerate this new technology, accept the great benefits of using it, and most likely to be less frustrated with the system (Carswell 1999).

Another group of students who is more likely to choose Internet base distance education is international students. These students are living permanently outside the US and wish to study and earn a degree from an American university. Most universities in the US routinely help international students come to the US acquire a visa and study on-campus, while facing the challenge of sponsorship employment due to the limitation of a student visa and the departure from their families back home for the duration of their studies. By using Internet base distance education, international students can stay in their home countries and earn an American degree. As class communication in an Internet based course is vital, in some cases students' respond to general class discussion will be more affluent in asynchronous communication tools than in synchronous. International students in particular, who speak English as their second language, will more likely favor the asynchronous type of communication tools and will feel more comfortable using it where they can employ a grammar and spelling checker prior to posting the messages online, rather than shy away from a synchronous or live audio session.

In summary, today's fast-track economy encourages many individuals to pursue learning over the Internet due to its great flexibility in time and easy access for traveling and working professionals. On the other hand, students who are less self-motivated and possess weak time management will most likely procrastinate and fall behind. As technology improves, the last-mile Internet access will advance to high-speed access, students' technical skills will improve, integrated Internet based distance education systems with both the first and the second generation systems will be a great value for many working professionals, international students and individuals with low time availability seeking advance education and new degrees.

THEPROFESSOR, FACULTY MEMBER, INSTRUCTOR, FACILITATOR:

In the past several hundred years, almost all instructional sessions where based on an individual(s), who present, talk, or lecture to a group of other individuals. As such, all students in a sense know what is the roll of the professor (I will use the terminology "professor", although it can clearly be referred also to an "instructor", a "lecturer", a "faculty member", or a group "facilitator"). As all professors were students in traditional classes before becoming professors, it is obvious that they know the roll of the professor and how to lecture and teach in conventional classroom settings.

In Internet based distance education one cannot expect professors, who never experienced being students in distance education courses, to have the same awareness when teaching such courses. Some educational institutions require their distance learning faculty to attend an Internet based distance education for the duration of one semester, prior to developing or teaching such a course. Evidently, due to professors' lack of time, low compensation, and pressure from administrators, most educational institutions press their professors to teach an Internet based course with very limited support and guidance from instructional media developers regarding pedagogical issues of learning over the Internet (Almeda and Rose 2000).

Above all, administrators demand more and more of their teaching time for special programs: weekend MBA, earning MBA, part-time MBA, executive MBA, online MBA, MBA abroad, and many others, in an effort to increase the enrolment numbers. With the use of Internet based distance learning systems, both first and second generation systems, institutions can reach new and remote markets and compete with other educational institutions, making the increase in demand for professors' time even bigger. Clearly the compensation for these over-load courses must justify spending nights developing and supporting Internet based distance learning students. Since Internet based courses are available for students 24×7, many students assume that the professor too is available 24×7 via e-mail or other Internet communication means. It is recommended for professors to clarify "online virtual office hours" in the beginning of the course and avoid this problem.

As the pressure on professors to teach over the Internet increases, time devoted for research and publications becomes secondary. Combined with that the fact that some institutions don't consider development of Internet based courses as a valid contribution to tenure review, the enthusiasm among professors to develop one greatly effected (Berg 2000).

There are two common methodologies about the development of Internet based course. The first one, which most educational institutions and administrators elected, is the notion that by providing sufficient incentives professors will develop their own course. This methodology presents many challenges for professors; many try to learn HTML, graphic and image development and other so called "new" technical skills. This unjustified challenge force many professors to learn these skills and eventually produce an online course. Although most professors correctly feel that these new skills are outside their job descriptions, and slowly abandon Internet course development and even teaching over the Internet. Also the lack of a uniform development and technical support produces in many cases amateur presentations and courses are not being consistence in the "look and feel" for students. There are too many educational institutions that try to educate their professors about Internet course development, instead of concentrating on helping professors to develop new ideas and changes needed for course curriculum appropriate for Internet delivery.

The second methodology is based on the notion that the professor has the knowledge and is the content expert and s/he should provide the initial content, ideas, and learning objectives, to a professional development support team who will provide the actual development of the course. Only few leading educational institutions and administrators understand this methodology that is popular in the business world. By doing so, institutions can greatly benefit from economies of scale in the development of Internet based courses and achieve consistent professional interface throughout their Internet based courses or Internet based degree programs.

Course and content copyright is another issue most professors feel very compassionate about. Some educational institutions state that while the course content is copyrighted to the professors, if developed by them, other institutions state that if the course content is converted to digital format and placed on the institution's servers by using funding from that institution, the copyrights ought to belong to them.

A common issue voiced by first generation Internet based distance education professors is the lack of control over the learning pace of students and limited communications with them. It is known that in order to be productive in asynchronous courses, students must posses excellent time management and self control to make sure they are up to date with the learning and assignments requirements. With individuals busy workload and working families it is very difficult for individuals to restrain themselves and devote time to learn and work on assignments after an exhausting work day, the need to pick up the kids from daycare or school and do some other errands. Effective teaching methods of first generation Internet based courses will engage students in stimulating discussions using bulletin board, and send reminders ahead of time via email. While in the second generation systems students are required to attend live sessions forcing them to devote time to learn, and at the same time, the learning pace during lecture is back in the hands of the professor.

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One of the most common questions that alarm professors about teaching over the Internet is related to quizzes and exams online. How do you know who is really taking the exam? Well, the answer is that we don't know. One way to look into this issue is by rethinking the course assessment mechanisms professors use when going online. As we move courses to the Internet, we must think about the new medium, its benefits and limitations. Therefore, it is recommended for professors to change the learning assessment mechanisms they use for conventional courses, and start looking at other and new learning assessment mechanisms that will fit the new course delivery medium. For example, while in many conventional courses, most professors assess the learning by mid-term exam (40% of the grade), final exam (50% of the grade), and class participation (10% of the grade). Over the Internet it will be wiser to consider having small quiz every week with total of 40% of the final grade for all quizzes, have individual or group assignments for another 30% of the grade and make more emphasis on class participation, bulletin board contributions, chat sessions participation, etc. for as high as 30% of the grade. When doing so, students will less likely have someone take the exam for them, as there are too many small assignments and quizzes to do rather than one or two major exams. When using open-ended questions exam, professors can pick the writing style of the bulletin board, e-mail, chat, and other open-ended or essay assignment and compare it to the writing in the exam, although this can be time consuming.

Class or group discussions are much more important when teaching via the Internet. In some cases anonymous student responds can greatly benefit the professor about the pace of the course, and the need for more explanations or discussion issues. Students are more apt to talk freely, particularly when it involves international students or students with English as their second language who feel much more comfortable using asynchronous type of communication tools, such as e-mail or bulletin board, where they can check their spelling and grammar, rather than being shy and not respond at all.

In summary, as today's professors' low compensation, limited support and stressful time constrains, it is crucial for professors to self-advance and get acquainted with new educational delivery and new dissemination technologies. Professors with experience teaching Internet based courses are much more marketable and demanded than professors without any experience in this area. Although face-to-face teaching is not going to fade away, as some think it will, knowledge and experience in this new type of teaching can also affect and improve teaching styles in general.

THE ADMINISTRATOR, IT ADMINISTRATOR:

Higher education administrators are very much interested today, more than ever, in Internet based distance education programs, as they face declining student enrollments, aging student population, and reduced level of federal, state, and local funding. On one hand this resulted in higher competition in the higher education market, that requires educational institutions to become creative and student oriented. On the other hand, this resulted in a rising number of institutions that are looking for new innovative ways, mainly by the use of new technologies, to attract students in remote or distance locations (Barker et al. 1989). Some higher education administrators were under the impression that class size is not limited any more as there are no physical restrictions on the number of students that can be taught via the Internet by an individual professor. This was clearly proven wrong and today most common professor-to-student average ratio is somewhere between one-to-thirty and one-to-forty-five without TAs.

As these new technologies emerge, so does the issue of training professors on using it and the issue of developing in-house experts on course development using the tool and administering it. In particular, when talking about Internet based courses, the issue of professor training is raised in many educational institutions. This comes back to the point I made before about the main difference between the two methodologies of developing Internet based courses. If an institution is training professors to develop their own courses from scratch, it will be very time consuming on the professors' time, make some professors uncomfortable with it, as this is clearly not their area of expertise.

Institutions should not spend the time and money on training professors to develop their own courses, as we don't train vehicle drivers to assemble cars. Rather, they should train professors to use the tools and to deliver their content via the Internet in the same way we train vehicle drivers to drive it and obey road signs. It is much better to have a professional development team coordinating Internet based course development with the professors rather than have the professors develop their own courses.

A professional development and support team can be an outside consulting firm or it can be a team of instructional media developers and programmers inside the institution. In some cases it will be much easier, and definitely much cheaper, to manage a local team within the institution rather than contract an outside vendor. Obviously retaining IT and instructional media developers in educational institutions is a tough issue today. Institutions can provide some "hot" incentives, such as substantial subsidy or even full coverage of tuition or other benefits easily provided by any institution. In some cases using an inside group can provide the institution a great first-mover advantages, as these employees know the environment and settings of the institution. This advantage can provide great benefit in establishing name in the market along with constant improvement (Reichand and Benbasat, 1990). Using outside consulting company or Internet course development company can be quite expensive. Furthermore, most of these companies will not reveal the pitfalls and complications most likely to emerge during the development and implementation of an Internet based distance education program, as these are the holes in their contracts that they can capitalize on when the educational institution becoming dependent on them for the continuation of the development and implementation.

Pertaining the content copyrights, some of these Internet based development companies don't mention it specifically, but they most likely to hidden it in small print within the contract. They will possess the copyrights for the format of the content they developed, making the educational institution dependent on that company for as long as they wish to deliver these courses via the Internet.

In summary, there is a clear rising interest among many administrators regarding Internet based distance education systems. Many feel that these systems could help them attract students in new and remote markets, while also enable their professors to teach more students at the same time. It is true that Internet based courses can help institutions reach new markets, and even provide complete degrees to students who never let foot on-campus, such as the one from University of Arizona, it is not true, however, that these courses will help professor teach more students. As this medium require more attention given to each student and can make faculty overwhelmed with electronic messages which can be time consuming. Nowadays most universities and higher education institutions charge premium for students taking Internet based distance education courses, I predict that in the next decade the coin will flip and students will have to pay premium for a seat in a conventional classroom.

CONCLUTIONS:

In this article I have attempted to stimulate students, professors, and administrators to pay closer look at Internet based distance education systems. As the first generation Internet distance education systems are in place for several years, a new emerging second generation systems are emerging, enabling professors to regain the control over the learning pace and provide lectures over the Internet similar to conventional on-campus courses. As mentioned in this article, an integrated system using both the first and the second-generation Internet based distance education system will provide the most benefit for students and professors. Although it will make the lives of IT administrators much more complicated as supporting both systems in parallel mode is not an easy task, it is likely to be a great value for students.

The tremendous growth of Internet based education or online learning in the business world and corporate universities in the past few years, is making its way to the academic world. As more and more individuals are stressed for time and demand to expand their education and knowledge, a greater pressure is set on higher education institution's and university's administrators to come up with new innovative ideas and new technologies to satisfy these needs. As a result professors will have to spend more time educating themselves on these new tools and ways of teaching in this new medium.

As most new technologies, Internet based distance education systems require training and learning mainly from the professors' end, as they are the ones to use it the most. If administrators will understand that the role of the professors is to provide the content, review the course development, and

teach the course, rather than develop it themselves, higher quality products, successful Internet based courses, and satisfied students will be the result. If administrators will continue pressuring professors to learn Internet based courses development instead of learning how to use these tools to teach via the Internet, a lower quality Internet based courses and unsatisfied students will be the result.

Further work in this area could include analysis of data collected from students participating in programs utilizing both first and second-generation Internet based distance learning systems compared to students participating in programs utilizing the traditional first generation systems. In addition, more work is needed to fully uncover our understanding of the ultimate Internet based distance learning system that can fulfill both professor's and administrator's needs, while providing a great value to students.

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